

CURRENT CWA §319(h) PROJECTS

Summary of Current CWA §319(h) Projects

The Polluted Runoff Control Program currently oversees nineteen 319(h) projects and has six projects under contract development. The projects are funded under Fiscal Year (FY) grants beginning in 1998 through 2001. Under the Request for Proposals (RFP) for FY 2002 the State did not receive enough qualified proposals to commit all of the available grant funds and will therefore issue a RFP as soon as possible.

Projects on Oahu

- Salt Lake Watershed Improvement Program
- Heeia Coastal Restorations Project
- Kalihi Subwatershed Project
- Waimanalo Stream Restoration Total Maximum Daily Load Implementation
- The (Koolau) Watershed Restoration Corps
- Cover Cropping to Reduce Nitrogen, Waialua
- Phytoremediation for Eutrophication

Projects on Maui

- West Maui Best Management Practices on Former Sugarcane Lands
- West Maui Strategic Fences and Ungulate and Invasive Species Removal
- Lahaina Watershed Revegetation Project

Projects on Kauai

- Demonstration and Training in Critical Area Stabilization Techniques on Agricultural Roads and Unprotected Waterways-East/West Kauai
- Nawiliwili Bay Watershed Restoration
- Nawiliwili Watershed Project (WRAS Development)

Projects on the Big Island of Hawaii

- Pelekane Bay Watershed Unified Watershed Assessment

Projects on Lanai

- Lanai Watershed Restoration

Statewide Projects

- Hawaii Water Environment Association (HWEA) Public Service Announcements
- Hawaii Association of Conservation Districts (HACD) Agricultural Road Stabilization
- NOAA Rainfall Frequency Atlas Maps Update
- Department of Education (DOE) School Watershed Project ('01-'03)

Salt Lake Watershed Improvement Program

Contractor: City and County of Honolulu, Department of Environmental Services

Project Period: December 1999 through December 2002

Federal FY 99 Funds/Match : \$20,000 / \$29,000

% of Project Completed: 75%

The project will reduce silt build up and odor in Salt Lake through monitoring, educational outreach programs, and by limiting the use of storm drain inserts, filtration devices, and chemical and biological treatments.

The project has been slow to complete contract activities. Several informational meetings were held concerning urban runoff and fertilizer and pesticide use within the Salt Lake Watershed. The project conducted storm drain stenciling, stream bank restorations, and developed educational information that was distributed to over 100 people during a Salt Lake Watershed Awareness Day held in September.



Salt Lake Waterway is overgrown with algae.

The (Koolaupoko) Watershed Restoration Corp

Contractor: Waimanalo Health Center

Project Period: June 2000 through November 2002

Federal FY 99 Funds/ Match: \$80,000 / \$80,000

% of Project Completed: 95%

The project will reduce sediment and nutrients from entering streams from eroding banks by planting vegetation along stream banks.

Native plants used to revegetate the stream bank are thriving and no longer in need of irrigation. The Waimanalo Health Center continues to maintain the three revegetated project sites. The final report for the project is due on November 15, 2002, which should supply results of an actual decrease in sediments and nutrients entering the stream. The experiences here will be transferred to other individuals and organizations interested in stream bank restoration.



Waimanalo Stream after streambank and channel restoration.

Heeia Coastal Restorations Project

Contractor: Friends of Heeia State Park
Project Period: May 2001 through December 2002
Federal FY00 Funds/Match: \$84,000 / \$84,000
% of Project Completed: 90%

The project will reduce nonpoint source pollution entering Kaneohe Bay through Heeia stream by planting vegetation along stream banks and removing alien flora from the immediate area.

Monthly stream clean ups, mangrove clearings, and planting of native and non-invasive species continue as well as daily and weekly educational presentations to schools and community groups. Water quality data is still being collected and is in the process of being analyzed.



Students participating in Park activities are encouraged to pull Mangrove seedlings out of the ground before they grow too big.

Cover Cropping to Reduce Nitrogen, Waialua

Contractor: Hawaii Farm Bureau Federation (HFBB)
Project Period: March 2002 through July 2003
Federal FY99 Funds/ Match: \$40,000 / \$43,500
% of Project Completed: 35%

This project demonstrates a Best Management Practice using cover crops to reduce the concentration of nitrates in soil following corn cropping and will distribute information gathered from the trials to encourage others to adopt this practice.

Students from Waialua High School have been recruited and trained in collecting project data and corn production. An operation and maintenance plan has been developed for the field sites and planting of the corn crop will be in October.



One of the sites in Waialua where the corn and cover crop rotation will take place.

Kalihi Subwatershed Project

Contractor: Protect the Planet (PTP)
Project Period: July 2002 through July 2003
Federal FY 99 Funds/ Match: \$38,500 / \$38,500
% of Project Completed: 5%

The project intends to improve the waters of Keehi Lagoon through the restoration of a section of Kalihi Stream and the establishment of a nonpoint source pollution education and community action program.

The contractor is developing a monitoring plan to track the progress of the project's restoration and outreach efforts and is working with local teachers in developing a curriculum that includes information on nonpoint source pollution and will use the restoration site as an outdoor classroom.

The Polluted Runoff Control Program recently participated with PTP and the City and County of Honolulu in an island-wide watershed model contest for high school and intermediate school students. Students made physical models of their watersheds and demonstrated how polluted runoff occurs and identified the potential sources of nonpoint source pollution.



Watershed Model.

Phytoremediation for Eutrophication

Contractor: City and County of Honolulu, Department of Environmental Services
Project Period: August 2002 through April 2004
Federal FY 00 Funds/ Match: \$97,055 / \$99,494
% of Project Completed: 0%

The purpose of this project is to improve the water quality of Keehi Lagoon through the installation of floating phytoremediation platforms (FPP) systems in Salt Lake. The FPP will remove nutrients and pollutants, reducing algae growth and siltation, helping to control the foul odors surrounding the waterway. Educational workshops will also be produced.

No activities, other than minor contract modifications, have been conducted as of yet.



Floating platforms growing two different types of plants will be placed within the Salt Lake Waterway.

Waimanalo Stream Restoration Total Maximum Daily Load Implementation

Contractor: University of Hawaii Pacific Biomedical Research Center

Project Period: June 2002 through August 2004

Federal FY 01 Funds/Match: \$120,000 / \$120,000

% of Project Completed: 5%

The project will improve water quality problems in the Waimanalo Stream and the Koolaupoko Watershed by implementing specific measures identified in the Waimanalo Stream Total Maximum Daily Load Implementation Plan.

The project has hired project staff and is contacting stakeholders in the Waimanalo Watershed to be a part of the project's advisory group. A monitoring plan is being developed and initiation of stream bank restorations should begin early next year.



This Moorhen, a native Hawaiian bird, is one of several native species who rely on Waimanalo Stream.

West Maui Best Management Practices on Former Sugarcane Lands

Contractor: West Maui Soil and Water Conservation District (WMSWCD)

Project Period: October 26, 2001 through October 2003

Federal FY99 Funds/Match: \$86,000 / \$70,500

% of Project Completed: 30%

This project is developing a Watershed Restoration Action Strategy and installing Best Management Practices that will address dust, sediment runoff, and flooding problems on former sugarcane lands.

Best Management Practices continue to be constructed and maintained on Maui Pineapple Company and Pioneer Mill Company land. However, because of labor constraints, construction has been slow this year. The project is creating a master list of all the BMPs constructed in the West Maui Watershed. This information can then be used to determine what level of effort is required in a watershed to adequately reduce nonpoint source pollution.



Cross slope planting—an example of BMPs being employed by Maui Pineapple Company.

West Maui Strategic Fences and Ungulate and Invasive Species Removal

Contractor: West Maui Soil and Water Conservation District (WMSWCD)

Project Period: September 2001 through October 2003

Federal FY99 Funds/ Match: \$200,000 / \$166,000

% of Project Completed: 50%

This project demonstrates the use of strategic fences to aid in the removal of ungulate and invasive species from watersheds and prevent further degradation by these feral pigs, cattle, goats, and deer.

The contractor continues to clear fence trails and construct strategic fencing within the West Maui Watershed. The project found the feral pigs to be more adept in traversing steep terrain and therefore longer sections of fencing will be needed to exclude the pigs. Monitoring of the number of feral ungulates removed from inside the fenced areas will begin shortly. This information will help determine if the strategic fences are useful in deterring feral animals from reaching the upper watershed.



The Polluted Runoff Control Program conducts a site visit, by helicopter, to monitor the progress of the trail clearings.

Lahaina Watershed Revegetation Project

Contractor: Pacific Islands Land Institute (PILI)

Project Period: March 2002 though March 2004

Federal FY00 Funds/ Match: \$109,430 / \$109,600

% of Project Completed: 15%

This project demonstrates how nonpoint source pollution from abandoned agricultural land can be reduced using culturally appropriate and economically beneficial plants.

Initial monitoring data has been collected and a baseline survey and inventory of the project site was developed. Several stakeholder meetings have been held to develop an operational and maintenance plan and monitoring plan for the project site. Restoration of the project area using native plant species is expected to begin in December.



Lahaina Watershed

Demonstration and Training in Critical Area Stabilization Techniques on Agricultural Roads and Unprotected Waterways-East/West Kauai

Contractor: East Kauai Soil and Water Conservation District (EKSWCD)

Project Period: September 1999 through March 2003

Federal FY98 Funds/Match: \$50,904 / \$52,678

% of Project Completed: 51%

The project will demonstrate techniques to reduce soil erosion and sedimentation. The project will transfer this technology to agricultural landowners and land users on Kauai and statewide.

Factors beyond the control of the EKSWCD, have caused great delays in completing the contract. All best management practices were installed and video taped. The project is creating the narrative to accompany the video footage and developing a plan to distribute the video and information developed to the public.



Nawiliwili Bay Watershed Restoration

Contractor: Pacific Islands Sustainable Community Ecosystems (PISCES)

Project Period: June 2001 through December 2002

Federal FY00 Funds/Match: \$64,000 / \$69,000

% of Project Completed: 90%

The project will demonstrate Best Management Practices that will improve water quality, implement educational and water quality assessment programs, develop a video to transfer information to others, and install and monitor storm drain inserts.

An informational video that address pollution problems within the Nawiliwili Bay Watershed was created and is currently being distributed. Storm drain inserts appear to be successful in removing debris, grease, and oil from stormwater runoff and are currently being analyzed. Water quality data continues to be collected and is currently being analyzed.



Nawiliwili Bay Advisory Meeting

Nawiliwili Watershed Project (WRAS Development)

Contractor: University of Hawaii, Department of Geology and Physics

Project Period: October 2001 through May 2003

Federal FY99 Funds/Match: \$106,080 / \$207,903

% of Project Completed: 50%

The project will assess current pollution levels and identify potential sources of contamination in the Nawiliwili Bay Watershed.

Phase 1 of the project has been completed. This includes a compilation and analysis of all water quality data and information available on the Nawiliwili Bay Watershed. Water quality data is currently being collected and plans for creating a watershed model are being developed.

The University continues to work with a local community group (PISCES) to ensure that the public is involved in the WRAS development. Work done within the watershed under this project will also assist the State in developing the TMDL for Nawiliwili Stream.



Pelekane Bay Watershed Unified Watershed Assessment

Contractor: Mauna Kea Soil and Water Conservation District (MKSWCD)

Project Period: December 2001 through July 2003

Federal FY99 Funds/Match: \$200,000 / \$160,000

% of Project Completed: 43%

This project will demonstrate Best Management Practices that improve vegetative ground cover and reduce soil erosion on arid dry rangeland.

Construction of a makai boundary fence has begun. Monitoring for erosion, percentage of vegetative cover and growth, stubble height, and water quality has also begun. Results of this monitoring will be analyzed to determine the effectiveness of BMPs installed.



Kawaihae Harbor at the base of the Pelekane Bay Watershed.

Lanai Watershed Restoration

Contractor: Department of Water Supply, County of Maui

Project Period: October 2001 through December 2002

Federal FY 00 Funds/Match: \$50,000 / \$50,000

% of Project Completed: 50%

The project will restore the Lanai Watershed by preventing further loss of soil and reducing nutrient loads of near shore waters through planting ground cover, installing fencing to prevent ungulates from causing erosion in the upper watershed, and removing weeds that increase fire hazard or that do not provide good erosion protection.

Several miles of fencing trails have been cleared and installation of fencing materials has begun. Educational presentations have been developed and the contractor is currently presenting the information to local schools and the community. The project is also developing movie theatre advertisements to inform the general public about non-point source pollution and other issues facing the island of Lanai.



The project coordinator and her fencing crew.

HWEA Public Service Announcements

Contractor: Hawaii Water Environment Association

Project Period: August 2001 through December 2002

Federal FY 00 Funds/Match: \$30,000 / \$41,000

% of Project Completed: 39%

This project will develop a Public Service Announcement (PSA) to educate the public about the causes of sewage spills, the impacts of sewage spills to public health and the associated monetary costs to sewer users, and the important role of the public in minimizing the occurrence of sewage spills.

All three PSAs were shot and edited. Currently, a press conference is being planned to announce the launch of the PSAs. A brochure that discusses how people can help prevent sewage spills is also being developed.

Hawaii Association of Conservation Districts Agricultural Road Stabilization

Contractor: Hawaii Association Conservation Districts (HACD)

Project Period: September 2001 through June 2003

Federal FY00 Funds/ Match: \$60,000 / \$47,000

% of Project Completed: 60%

The project will establish demonstration sites throughout the state to measure the effectiveness of various soil and fiber amendments available in the commercial market for reducing erosion and dust production from agricultural roads.

Most field trials have been completed successfully. When all data from the field trials have been collected, the data will be analyzed to determine which dust suppressants are best suited for Hawaii's varying soil types.



Dust particles kicked up by passing trucks are collected in buckets for weight analysis.

NOAA Rainfall Frequency Atlas Maps Update

Contractor: University of Hawaii, Department of Meteorology

Project Period: October 2001 through June 2003

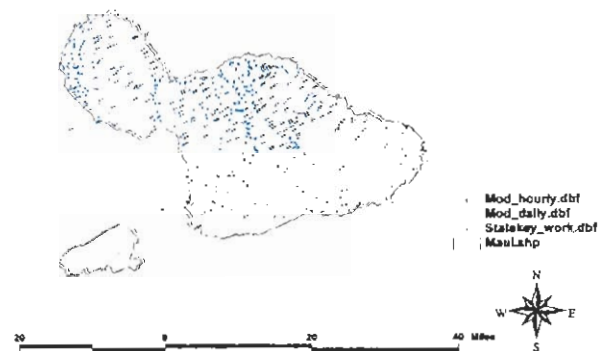
Federal FY01 Funds/Match/Other Federal Funds: \$30,000 / \$70,000 / \$30,000

% of Project Completed: 40%

This project is providing supplemental rainfall data for the National Weather Service's update of the Rainfall Frequency Atlas for Hawaii in order to improve reliability of computer runoff models used for nonpoint source pollution prevention and control.

To date, the islands of Hawaii and Maui have finished being researched and information from an additional 75 rain gauges have been digitized and sent to the National Weather Service for incorporation into the Rainfall Frequency Atlases. The islands of Oahu and Kauai are currently being researched.

Maui



A map showing the distribution of rain gauges available for data collection.

Department of Education School Watershed Project ('01-'03)

Contractor: Department of Education (DOE), Environmental Education Specialists

Project Period: May 2002 through August 2004

Federal FY00 & 01/Match: \$164,046 / \$165,737

% of Project Completed: 5%

The project will develop a teacher development program for the Honolulu district schools through which teachers will learn how to assist students in achieving selected content standards in the context of watershed study, which deepens understanding of nonpoint source pollution and fosters environmental stewardship. Working through the DOE, the Polluted Runoff Control Program can reach students statewide.

A project resource teacher was hired to coordinate the teacher development courses. The courses will be developed by mid-October and held in late-November. A draft plan for an educational network was developed. The network will allow classroom teachers and support personnel an opportunity to share their successes and challenges in dealing with watershed related programs.

CURRENT PROJECTS FUNDED UNDER A MACROALGAL BLOOM §104(b)(3) GRANT

CWA Section 104(b)(3) provides funding for projects that accomplish storm water control, sludge management, and pretreatment. Currently PRC utilizes these funds in administering two contracts with demonstration sites and implementation of Best Management Practices to control storm water.

The funds have been targeted for the West Maui Watershed. West Maui identified the abundance of macro algae, in its Watershed Owners Manual, to be a species that 'grows like a weed' and is difficult to control. Algal blooms in West Maui involve three types of macroalgae: *Cladophora*, *Hypnea*, and *Ulva*. Elevated concentrations of dissolved nitrogen and phosphorus in the narrow band of nearshore water where macro algae thrives is attributed to groundwater seeps which carry fertilizer leachate from large-scale agriculture, cesspools, and septic systems. With funding provided to contractors on Maui, PRC works to reduce nutrient input to the ocean from the watershed, and help improve the quality of West Maui's coastal waters for recreational use and aesthetic purposes.